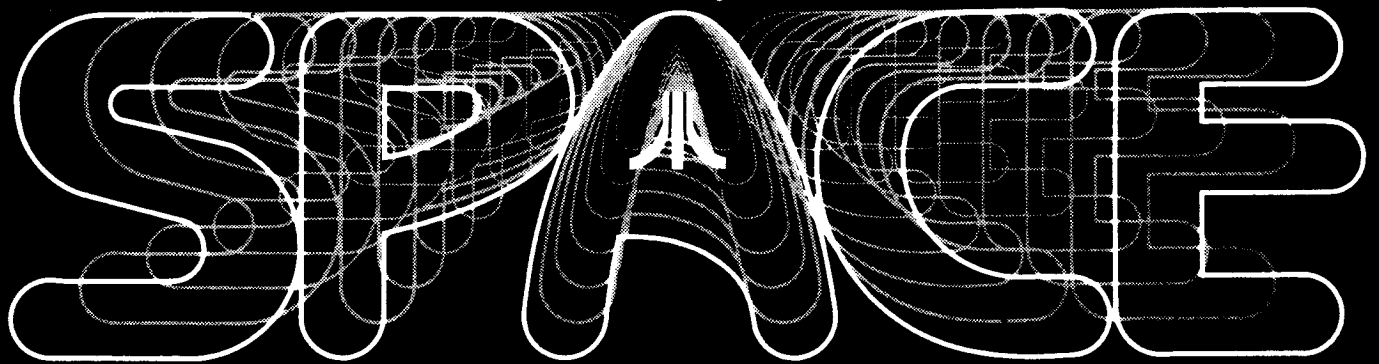


Saint Paul ATARI Computer Enthusiasts



An independent computer user group

MARCH - 1985

Bytes From the Pres

Our big news this month is that SPACE is moving to a new location. This is because our membership has doubled since last October. In addition, the meetings will start 30 minutes earlier and dues are now \$14.00 per year (beginning March 8). So, we will meet at the St. Paul campus of the University of Minnesota in rooms B-35 (meeting) and B-36 (dealers, etc.) of the Office Classroom Building. See attached map. The rooms are reserved from 7:00 pm to 10:00 pm. The business part of the meeting will start at 7:30 (although I will start a little late this time to let everyone get a chance to find us). I plan to arrive at 7:00, and there is not much point in arriving any sooner, unless we plan a "special" such as a swap meet, etc.

I did check with the Earle Brown center and found out that rental was \$120 per meeting as opposed to the \$31.50 for the Office Classroom Building. We were not paying any rental at Minnesota Federal, so you can see why the dues had to be raised.

The meeting will be organized pretty much the same way. The dealers will be in the other room. Disk and cassette of the month (DOM) will be sold from the front area of the main room. Bruce Haug requests that you try to buy the DOM before

the main meeting. He or Frank will demo one of the DOM programs during the meeting. The paper/educational software library will still be "somewhere in the stands" of the main room, before and after the meeting. Perhaps Jim Shulz would like to set specifics and tell us at the meeting. (Incidentally, Jim will have a listing for both libraries at the meeting). The Beginners group will again meet after demos, but will mostly use the club's equipment. We are again asking Jon Nelson to bring his 800XL since this is what most beginners are using.

We again had a terrific turn-out of members last month. I noticed a lot of action at the swap meet. I was able to swap 3 programs for 4, so I was happy with the deal.

Also, please complete the survey in last month's newsletter, if you haven't already, and return it to Mark Vallevand or myself at the meeting. Mark plans to compile the surveys and write a newsletter article with the results. So, be sure to turn yours in!

P.S. You don't have to be a club officer to write an article.

Bob Floyd
(The Pres.)

Beginners' BASICs #3

by Bob Floyd

Well, here's the promised column on DOS, the disk operating system. Actually, I don't plan to talk about DOS too much, but why there is any DOS at all. First of all, the computer does not have more than just a rudimentary knowledge of communicating with a disk drive built into it. So, it is unable to access files, load programs, etc. by itself. This is where DOS comes in. Upon power-up, the computer loads DOS into memory. DOS is a program that tells the computer how to communicate with the disk drive in a more sophisticated manner. DOS organizes files on the disk in such a way that the computer can load programs, store and retrieve data, etc. in a consistent manner.

For those who don't know what a file is, it is simply like a folder full of information. It may contain a BASIC program, AtariWriter text information, data values, etc. It is just a place to store your information.

Atari DOS 2.0S is the most common DOS in use on the Atari. It is actually 2 files (or programs), DOS.SYS and DUP.SYS (the disk utility package). DOS is the main program and resides in computer memory after loading. DUP is the menu program for managing your files. Functions such as renaming, deleting and locking of files are performed from the menu. I won't go into the commands, except for a couple. You should consult a book such as Your Atari Computer by Lon Poole for better explanations. Use option "O" to duplicate files. Option "C" (copy) is mainly for 2 or more disk drive systems. Option "J" (duplicate disk) copies the disk on a file-by-file basis. This is OK if all disk information is in files. In some cases, such as boot-disks, some data will not be copied. For duplicating disks, I prefer using a "sector copier". This type of copying handles raw disk information whether it is in files or not.

Ultracopy, from Soft Unlimited (Todd Burkey) is a good sector copier program. It has the same limitations as DOS in trying to copy protected programs, except those old schemes with bad sectors only. Option "L" (binary load) is used to load machine language files such as those from ANALOG Magazine, etc. Option "N" (MEM.SAV) is not very useful. Normally when you go to DOS, any program in memory will be lost. If you have created MEM.SAV on your disk previously, the program will be stored in MEM.SAV before entering DOS. However, this causes a considerable wait when going to DOS, because your program must be saved first.

As you may have gathered, there are two types of disk organization, DOS and "boot". A boot disk does not normally contain DOS on it and probably never needs to access files of information. So, if you do a DOS "directory" command on a boot disk, you will either get "000 free sectors" or gibberish. There is a signal recorded on the disk that tells the Atari (during power-up) whether to treat the disk as boot or DOS. If it is DOS, then DOS is loaded and AUTORUN.SYS, if present, is executed. (AUTORUN.SYS must be a machine language program). If it is a boot disk, the program will be loaded and run automatically. Disk storage is a little different, too, for boot disks, although I won't go into that here. This is a fairly simple explanation, but should suffice for most users.

DISK OF THE MONTH

The disk/tape of the month contains programs from the club library. The tapes can be purchased for \$3 and the disks for \$4. The group makes a small profit from the sale of these which go toward supporting some of the things the group does. Each disk/tape usually contains eight to twelve programs. Most of these programs are games with some utilities and demos mixed in. The programs are obtained from trading

with other user groups and from submissions from local members. Members who submit a program will receive a disk or tape of the month ee! What a deal!!

--THIS MONTH'S PROGRAMS--

1. MENU
2. SPMENU
3. EXBAS.INS -- PRINTS INSTRUCTIONS (#4) FOR EXTBASIC on screen or printer.
4. EXBASDOC -- documentation for #5 DO NOT run. #3 runs this prog.
5. EXTBASIC -- RUN #3 follow instructions writes EXTENDED BASIC to disk.
6. BOWLING.RUN -- Loader for #7
7. BOWLING.OBJ -- will not run by itself, #6 loads and runs.
8. DIETY -- allows DISK sectors to be sent over a MODEM in the form of a listed Basic Program.
9. NORAD -- simulates breakin to North American Air Defense Comand.
10. WAR -- 3D Artillery Battle word text game.
11. SEARCH -- Maze text game.
12. TVTEST -- TV alignment patterns, BAR,DOT,CROSHATCH,COLOR.
13. RPMTEST -- Checks disk drive speed.

For those of you who are new to the D.O.M. here are some operating hints. After you are finished with one program and you whan to bring in another, simply hit the break key, and then type in RUN "D:SPMENU". This will return you to the space menu.

Not all of the programs on some of the older D.O.M.'s work I would like someone to make a list of these, and then ask for a volunteer to fix the problems and then I will make up a new disk.

D.O.M. T.O.M. news
by Bruce Haug

This month's disk was put together in a hurry in order to make the early newsletter deadline. There are some interesting programs on it. One word of WARNING!! DO NOT run programs #4, #5, and #7.

Program #3 loads prog. #4, which is the OPERATING INSTRUCTIONS for #5. Program #6 is the loader for prog. #7, and there is a small problem with #7 in that when it is finished, it states "HIT RESET TO RESTART" this clears memory and returns you to BASIC. The program runs good otherwise.

The T.O.M. will just be one tape for half price with the basic programs only.

SEE YOU MARCH 8th
BUY YOUR DISK BEFORE THE
MEETING STARTS!!!

February Meeting
Minutes

by Joanne Floyd

The last SPACE meeting was held on Friday, January 8. Bob Floyd, the president, reported on the latest news from Atari. According to an Infoworld article, seven major software suppliers are planning to write software for the new ST line. Atari is also trying to move in on the hard disk market. Bob also noted that one of the best Atari resource books he has ever read, Your Atari Computer by Lon Poole, has been updated for XL users. Bruce Haug, the vice president and disk librarian, discussed the results of his disk of the month survey. Club members seem generally pleased with the content and quality of the disk of the month programs. Someone asked Bruce why the disk of the month menu wouldn't run on 800XL computers. Bruce discovered that the AUTORUN.SYS file did work on 800XLs if you press the spacebar after loading the disk. Max Feuer, the treasurer, reported that the club's bank balance is up to \$702.18 thanks to the recent increase in membership and disk of the month sales.

Under new business, the main topic discussed was the move to a new meeting place. Bob presented the club members with three options: (1) Keep the yearly dues at \$10 and remain at the present meeting place,

which is clearly inadequate in terms of space, (2) Raise the dues to \$14 which would allow the club to rent facilities on the U of M's St. Paul campus, or (3) Raise the dues to \$18 which would allow the club to rent the Falcon Heights City Administration Building. After some discussion, the club voted to move to the St. Paul campus facilities because a larger meeting room is clearly needed to handle the increase in membership. The move would also allow the club to meet at an earlier time, which would be nice for club members with young children.

At the end of the meeting, Bob demonstrated the new game program Bounty Bob Strikes Back!, which is a sequel to the classic Miner 2049. Both of these programs are distributed by Big Five Software, which is selling out its inventory of Miner 2049 for \$10/cartridge. (Bob highly recommended both programs as personal favorites.) Bruce and Frank Haug and Jon Nelson led another session of the beginner's group for interested members. (Bruce reminded everyone that you do not have to be a "new" computer owner to attend the group. You may be an "older" owner who has some basic--or should I say BASIC--questions to ask, especially if you have just begun programming on the computer.) A swap meet was also held at the end of the meeting.

SURGE PROTECTION by Bruce Haug

This article is written to help the average computer owner protect his investment from costly repair bills due to power line surges. If you have any questions, most of the answers can be found in BYTE Dec. 1983, "KEEP POWER LINE POLLUTION OUT OF YOUR COMPUTER" by Steve Ciarcia, which prompted me to write on this subject.

The method of protection I am writing about will not solve your problems of the interference from the mixer your wife turned on in

the kitchen or the lines on the TV screen that appear when your neighbor starts his old car. This simple protection will save you costly repair bills.

The most damaging power-line disturbance is the high speed, high voltage "SPIKE". People speaking about "power-line transients" are probably talking about this event. They usually last less than 100 microseconds, but they can be up to 6,000 volts. They are caused by several network load changes or by lightning.

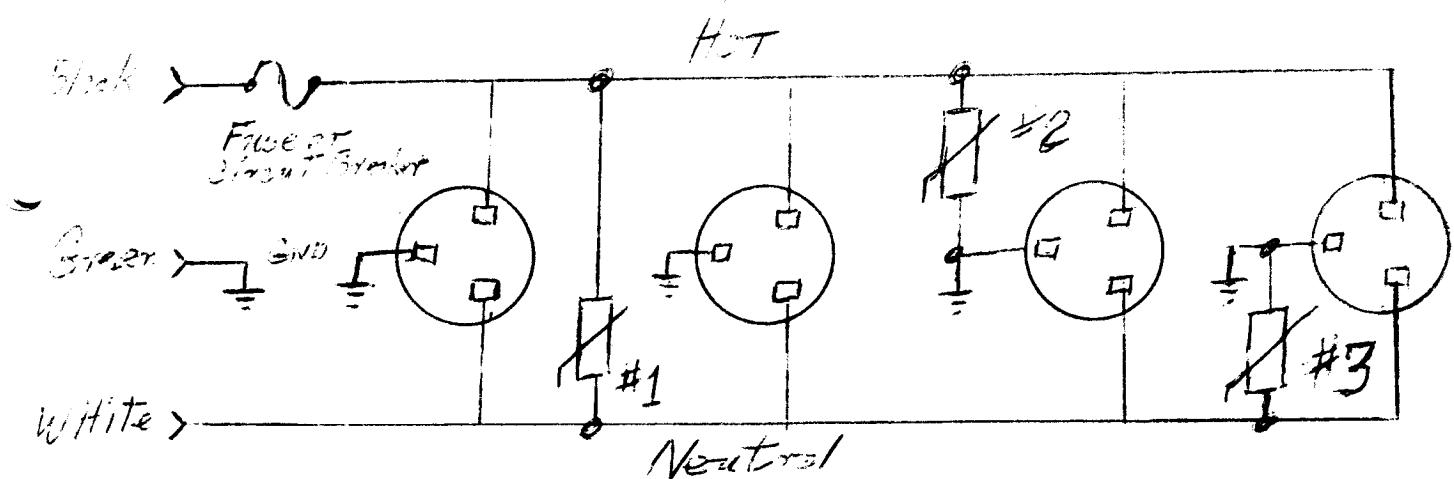
Whenever you plug in a vacuum cleaner, hair drier, or other appliance (even your computer) you could be creating some potentially serious transient for other equipment on the same power line.

The "protection" you need is 3 "MOV's" installed in the power strip you plug your computer system into. A MOV is a Metal-Oxide Varistor. When the Voltage to your equipment is lower than you need, the MOV appears as a nonconducting open circuit. When the voltage becomes greater (when the "SPIKE" or Transient hits) the MOV conducts clamping the voltage to a safe level.

First you need 3 MOV's - General Electric V130LA10A available at Radio Shack at \$1.59 each (Stock #276-570). Next, if you don't have a powerstrip, purchase one - I got mine at K-MART for \$12.97 - it has 6 outlets and a 15 amp circuit breaker - I hear TRUE VALUE has one for \$8.88.

The 3 MOV's are installed as follows: One between the BLACK (HOT) and the WHITE (NEUTRAL) leads. The second is connected between the BLACK (HOT) and the GREEN (GROUND). The third is installed between the WHITE (neutral) and GREEN. See diagram below.

I will bring my completed unit to the March meeting. See you there.



MC68000

16/32 Bit Microprocessor

by Tim Barr

Downloaded from Compuserve

The MC68000 is a 16-bit MPU with 17 general purpose 32-bit registers, a 32-bit program counter and a 16-bit status register. The first eight GP registers (D0-D7) are used as data registers. The next seven GP registers (A0-A6) and the system stack pointers can be utilized as address registers and pointers for software use. The data registers can be used for different data sizes. These sizes are: byte (8-bit), word (16-bit), and long word (32-bit) operations. The MPU has a 24-bit address bus (actually it is 23-bit address line and a hi byte and low byte select lines which gives you 8 megawords or 16 megabytes of memory) and a 16-bit data bus.

Five basic data types are supported by the instruction set. These data types are: Bits, BCD digits (4-bits), Bytes (8-bits), Words (16-bits), and Long Words (32-bits). The MPU has 14 address modes of six basic types: Register Direct, Register Indirect, Absolute, Program Counter Relative, Immediate, and Implied. The suprising thing about the 68000 is that it only has 56 instruction types and a total of only 88 actual instructions. The actual 16-bit op-code that the system uses is a combination of an instruction and an addressing mode, register number, an op-mode, instruction specific data, or any combination of the four. (instruction specific data is such

information as shift direction, branch conditions, operation size, etc.) This provides you with over 1000 actual instructions, but keeps the total number of instructions small.

I will try to upload a list of the basic instructions of the 68000, but I wanted to mention a few of them here. The MPU can perform ADD and SUBTRACT functions on BCD digits in groups of two digits. It can also MULTIPLY and DIVIDE binary numbers in these formats: 32-bit/16-bit=>32-bit and 16-bit*16-bit=>32-bit. The signed DIVIDE is the slowest instruction to execute on the 68000. It takes 170 clock cycles or 21.25 microsec at a clock speed of 8 MHz. This means that you could divide any 32-bit number in memory by any 16-bit number in memory over 47,000 times in one second!!

I hope that this file has given you a general idea of the power of the processor that the new Ataris will be using. If you are interested in more information, I would like to suggest a couple of books that are available. The first is published by Howard K. Sams & Co. and is called "68000:Principles and Programming" by Leo Scanlon. You should be able to order this book though the Howard Sams section of CIS.(GO SAM) The second book I would like to recommend is "M68000 Programmers Reference Manual" available from Motorola Semiconductor Products Inc. P.O. Box 20912, Phoenix, AZ,85036; document # M68000UM(AD4).

TaT

WORD COUNTER FOR ATARIWRITER

by Russell Crum

The ASTRA 2001 disk drive is a dual, single sided double density five and one-quarter inch floppy disk drive manufactured by ASTRA systems of Santa Anna, CA. The drive system has an integral power supply, (no external transformer!) and comes complete with Smartdos, and a daisy chain interconnect cable to connect it to the Atari. The system is packaged in a dark brown and cream colored enclosure, which is matched to the appearance of the Atari 800XL. The drive system is warranted 90 days from the date of purchase.

The system has the capability of reading and writing both single (88K bytes), and double density files(180K bytes). When used in the double density mode with SmartDOS or DOS XL (from Optimized Systems Software) the data transfer rate between the drive and the computer seems to be about twice as fast as when using Atari DOS 2.0S, because of the transfer of 256 bytes at a time instead of 128.

During the approximately five months that I have owned the Astra system I have experienced one failure of the power supply, this failure was related to a power supply design problem, and was repaired in a prompt and courteous manner by the company. User Friendly was very helpful in the way that they handled the repair for me. Thanks Larry.

The only apparent disadvantage to the Astra 2001 system is that due to the fact that the drive uses the timing hole in the diskette, the system will not format the back side of a diskette. However, once the backside of a diskette is formatted the system will use the back surface in the normal manner.

I have had no problems loading software from disk with this system, although there may be programs that won't load that I do not have.

In conclusion, I would say that if you have a need for this type of floppy disk drive the Astra 2001 seems to be a dependable, easy to use drive, which is priced competitively with the other third party dual density drives.

Have you had the need to know how many words were in a document that you had created? Need to write a 1000 word essay for a class assignment, for example? This little routine will handle that if you are using ATARIWRITER.

The basis for this routine was published in ANTIC magazine (November 1984, page 8) for BANK STREET WRITER. I modified that routine to fit ATARIWRITER more accurately. The REMarks in the program should explain most of its operation for you. In lines 110 and 220 are commands unique to OSS's BASIC XL. If you don't have BASIC XL, these commands (ERR(0) and ERR(1)) are easily replaced with the Atari BASIC PEEK commands into the error memory locations (186,187 and 195).

[Listing 1 is for BASIC XL. Listing 2 has been modified for regular Atari BASIC. -Ed.]

Operation of the program simply involves RUNing this program with your ATARIWRITER file disk inserted into the proper disk drive. One thing to recognize is that any group of characters separated by a space or return character is counted as a word. Thus, titles, headers, etc. are all counted as words.

```
5 DIM A$(14):REM for regular Atari BAS
IC and ATARIWRITER only
7 ? CHR$(125):? "THIS PROGRAM COUNTS W
ORDS IN AN ATARI-WRITER DISK FILE"
10 ? "ENTER DEVICE & FILE NAME ":INPUT
A$:OPEN #1,4,0,A$
20 TRAP 110
45 GET #1,B:IF B<>155 THEN 45:REM get
past doc. control characters
50 GET #1,B:IF B<>32 AND B<>155 THEN 5
0:REM find space or CR
60 GET #1,B:IF B=32 OR B=155 THEN 60:R
EM wait until non space or CR char.
70 COUNT=COUNT+1:GOTO 50:REM count wor
d and do again
110 IF PEEK(195)<>136 THEN CLOSE #1:GO
TO 220
120 CLOSE #1: ? "WORD COUNT =";COUNT+1:
END
220 ? CHR$(253):? "ERROR NO. ";PEEK(19
5); " AT LINE NO. ";PEEK(186)+256*PEEK(
187):END
```

BBS NUMBERS

Reprinted from TAIG Newsletter

LAST UPDATE 5-22-84

AEK MBBS...(DOWN TIL 8/1)..488-0879
 ALPHA-SAM2.....920-0384
 AMATUER FAIR ON-LINE.....291-0567
 COMMDITIES ABBS.....333-8970
 COMPUTER KINGDOM.....926-9208
 COMPUTER PLACE.....869-3246
 CR'S BBS.....824-2575
 DISKCOVER SOFTWARE.....929-0551
 GAMBIT TIMESHARE.....484-3636
 GHOST/MECC MAIL.....333-5947
 GOLFISOFT'S BBS.....941-8519
 HACKER'S HIDEOUT.....(TD)544-1859
 HEATHKIT.....778-1213
 ICECUBE.....431-5882
 KNIGHTS OF THE ROUND TABLE.457-4139
 LAWSIG.....872-2352
 LOKI'S CORNER.....571-5965
 MATCHMAKER BBS.>AFT.10PM...529-3044
 MCMS GOLIATH, ANOKA.....753-3082
 MCMS NC SOFTWARE, MPLS....433-5194
 METRO-NET.....429-6929
 MINN.EPSONET.....472-2218
 MOTEL.....788-8029

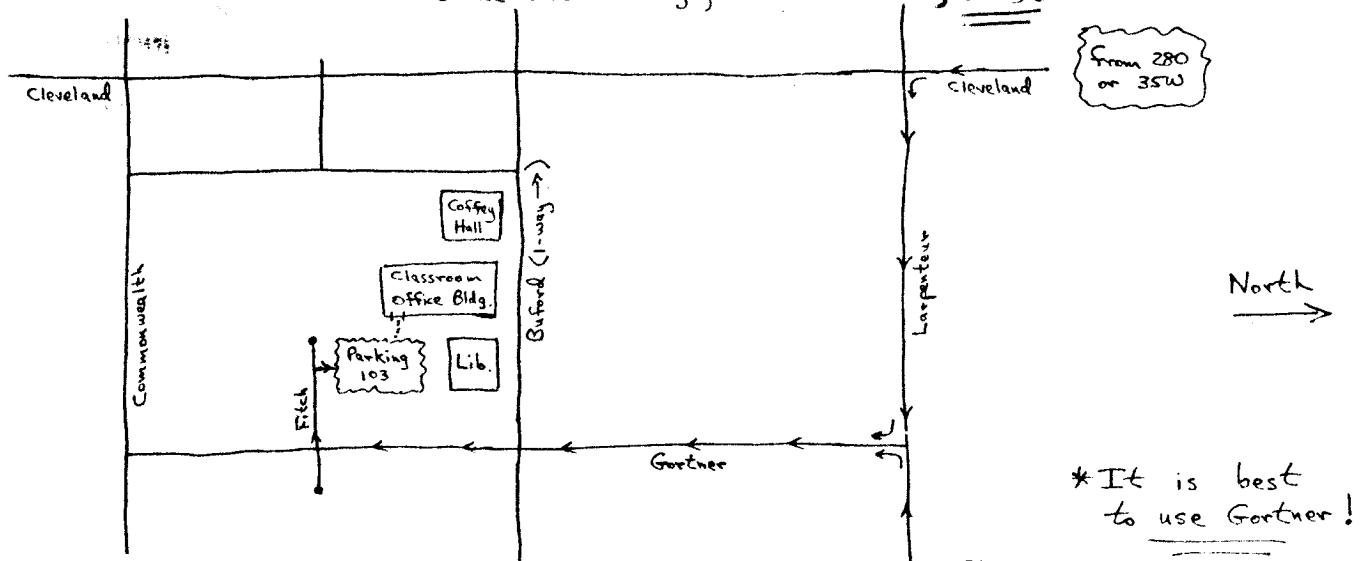
NITES OF THE A-CAT.....(TD)941-7114
 ON-TARGET.....546-1013
 PAUL'S SECRET SERVICE.....473-6668
 PHREAKERS BBS.....(TD)699-5657
 PIRATES ISLAND.....825-5852
 PMS - TWIN CITIES.....929-8966
 PMS - MPLS.....929-6699
 THE PORT.....647-0422
 PRIOR LAKE BBS.....447-3899
 REVELSTONE.....831-1492
 SAFEHOUSE.....724-7066
 THE SHIRE.....781-0051
 STOREKEEPER.....333-4177
 SONSHINE SYSTEM.....423-4818
 TAIG/SPACE.....544-9058
 TCCCC BBS #2.....545-3995
 TCRC COMP. NET.(HAM RADIO).884-1795
 THE THIEVE'S GUILD.....338-7956
 TWIN CITIES EXPRESS.....788-0506
 TWM'S MTHB#2.....884-7951
 UNITED RBBS.....731-1063

The BBS' with the (TD) in front of their numbers are at this time temporarily down.

Any new boards or changes will be appreciated. Thank you. - Phil

SPACE Meeting Place

U of M St. Paul Campus
 Office Classroom Bldg., rooms B-35 + B36, 7:30



Take Gortner south from Larpentour.
 (Gortner is about 1/4 mi. east of Cleveland). Follow
 Gortner to the second stop-sign. This is Fitch.
 Turn right + go into Parking Lot #103 (The # will be
 hard to find). Don't park in the "contract" lots
 numbered 158. You can go in the back door of the
 Classroom Office Bldg. The rooms are on the ground
 floor to the right.

WANT ADS

It is possible for members to place 'Want Ads' in this newsletter. The ads may be for selling used hardware, used software, tutoring services, or just about anything that has to do with Atari. The rates are as follows:

6 Lines	\$1.25	216 Letters
1 Line	.25	36 Letters

The following is a list of advertising rates for vendors or individual members.

Full page	\$18.00	7-1/2" X 10"
Half page	10.00	3-5/8" X 10"
Half page	10.00	7-1/2" X 5"
1/4 page	5.50	3-5/8" X 5"

All advertisements must be paid for when they are submitted. Deadline for ad placement is the last Friday of each month. To place ad or for more info, call the editor.

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Bob Floyd . . . President	487-2627	Jon Nelson . . . Editor	484-9027
Bruce Haug . . . Vice-Pres	774-6226	Max Feuer . . . Treasurer	483-3895
Bruce Haug . . . Disk Lib.	774-6226	Bruce Haug . . . Cass Lib.	774-6226
Jim Schulz . . . Paper/Ed. Lib.	537-5442	Joanne Floyd . . . Secretary	487-2627
SPACE/TAIG Bulletin Board . . . 544-9058			

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2589 Fisk St.
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J. P. Scheib
3944 24th Av. S.
Minneapolis, Mn. 55406

Next SPACE Meeting:
Friday, March 8, 1985
7:30 P.M.

U of M St. Paul campus
Office Classroom Bldg.
Rooms B-35 and B-36
St. Paul, Minnesota